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50X1-HUM

COUNTRY Poland

REPORT

SUBJECT Walbrzych District Gasworks

DATE DISTR.

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NO. PAGES

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SOURCE EVALUATIONS ARE DEFINITIVE. APPRAISAL OF CONTENT IS TENTATIVE.

2. An overlay showing the location of gas pipelines in the Walbrzych district, referred to in this report as Annex B;

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THE WALBRZYCH DISTRICT GASWORKS IN POLAND (C)

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WALBRZYCH DISTRICT GASWORKS IN POLAND (C)**Introduction**

This report contains information on the Walbrzych District Gasworks (Zakłady Gazownictwa Okregu Walbrzyskiego - ZGOW) in Poland. Specifically, it gives the 50X1-HUM administration and subordination of the main office of the Walbrzych District Gasworks; the geographic location of all high pressure gas pipelines in the Walbrzych District; statistical information on coke plants, consumers, export of coal gas, and subordinate agencies of the Walbrzych District Gasworks; the best methods of destroying the gas pipeline system in the Walbrzych District. 50X1-HUM

The gas pipeline system in this area was in very poor condition, and little was being done to improve it. The only repairs being made were those that were absolutely necessary. The Polish government encouraged people to move into the 50X1-HUM area, but the government itself was not willing to invest any money there to improve it. this was true in all fields of industrial development in this area and not just in the gas industry, because it was generally felt throughout Poland that this land would some day be returned to the Germans. In addition, the people living in that area claimed to be East Germans and not Polish. Names of persons occupying key positions are given in the report when known. 50X1-HUM

Listed below are the names and geographic and UTM coordinates of locations used throughout the report.

<u>Location</u>	<u>Geographic</u>	<u>UTM</u>
BOLESŁAWIEC (BUNZLAU)	N51-16, E15-34	WS-3979
BRZEG DOLNY (SKIFERSDORF)	N51-18, E16-45	WS-2185
JEDLINA ZDROJ (BAD CHARLOTTENBERUNN)	N50-44, E16-20	WS-9521
KARPACZ (KRUMMHUEBEL)	N50-46, E15-46	WS-5325
KOWARY (SCHMIEDBERG)	N50-48, E15-48	WS-5727
LUBAN (LAUBAN)	N51-07, E15-17	WS-2040
LWOWEK SLASKI (LOEWENBERG)	N51-07, E15-35	WS-4162
STARA KAMIENICA (KEMNITZ)	N50-55, E15-35	WS-4141
SWIDNICA (SCHWIDNITZ)	N50-51, E16-30	XS-0533
SWIEBODZICE (FREIBURG)	N50-52, E16-20	WS-9335
SZCZAWNO ZDROJ (BAD SALZBRUNN)	N50-49, E16-17	WS-898297
WALBRZYCH (WALDENBURG)	N50-46, E16-17	WS-9025
ZABRZE (HINDENBURG)	N50-19, E18-37	CA-4275

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1. Location

the main offices of the Walbrzych District Gasworks were in the city of WALBRZYCH.

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2. Mission

The mission of the Walbrzych District Gasworks was to receive raw coal gas from the Victoria, Bialy Kamien, Mieszko, and Boleslaw Chrobry Coke Plants, to send part of this gas directly to consumers of raw coal gas, and to purify the remainder at the Sobieniec Compressor and Purifying Station, from which it was then transported to the West and to the East by trunk line under 12 atmospheres of working pressure. Part of this purified gas was used by consumers along the trunk line, and the remainder was exported to East Germany. East Germany also received coal gas from a city gasworks in ZGORZELEC (GOERLITZ). This gasworks, which was directly subordinate to the Walbrzych District Gasworks, is discussed in paragraph 4.d. (1)(f) of this report.

3. Organization of the Main Office of the Walbrzych District Gasworks
(see Annex A)

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a. Office of the Director

In 1959, HRLASZEK, (fnu), was director of the Walbrzych District Gasworks.

As director, HRLASZEK was responsible for the entire Walbrzych District Gasworks and had only to answer to the director of the Association of the Gas Industry (Zjednoczenie Przemyslu Gazowniczego - ZPG).

One private secretary worked in his office.

The following branch offices were directly subordinate to the office of the director:

(1) Personnel Branch (Dzial Personalny)

This branch kept the personnel records on all employees of the Walbrzych District Gasworks. It was also responsible for checking on any prospective employee to find out where he or she had worked before and whether he or she was a heavy drinker, a troublemaker, or a poor worker. This branch also kept a card file on all employees showing the length of service in the Walbrzych District Gasworks and whether they were Communist Party members.

(2) Main Bookkeeping Branch (Dzial Glownego Ksiegowego)

This branch was responsible for keeping the financial records for the Walbrzych District Gasworks. For example, the sale and purchase of gas, major repairs, minor repairs, investment in new construction work, and the payroll for the Walbrzych District Gasworks were each kept under a separate account. This branch had to keep a record of how much money was coming in and going out of each account.

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It was also responsible for keeping the records for the depreciation fund. each piece of equipment was given a certain number of years of life expectancy, and, in order to be able to

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replace a piece of equipment when it wore out, funds had to be available to purchase a new one. To ensure this, the number of years a piece of equipment was supposed to last was divided into its total cost, and this amount of money was sent to the bank every year. In this way the money to buy a new piece of equipment was on hand when the old one exceeded its life expectancy.

(3) Planning Branch (Dzial Planowania)

There were four people working in this branch, the chief of the branch and three planners.

The branch was responsible for making plans for one year in advance on needs for gas and its cost to the Walbrzych District Gasworks and the consumer. The figures on the future needs of gas were obtained by making surveys of all consumers of gas in the Walbrzych District and finding out how much gas each would require in the future.

This branch was also responsible for making plans for future construction work, including the type of construction work and its cost to the Walbrzych District Gasworks. These plans were also made for one year in advance.

(4) Employment Branch (Dzial Zatrudnienia)

This branch was responsible for acquiring new workers and making sure that no more than the authorized number were employed in the Walbrzych District Gasworks. It was also responsible for keeping a record of what percentage of the monthly work norms was fulfilled and for making out the payrolls for the Walbrzych District Gasworks.

(5) Legal Advisor's Section (Radca Prawny)

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[redacted] there was only one man working in this section. He was a lawyer who handled such legal problems for the Walbrzych District Gasworks as the following: if a small consumer did not pay for the gas he received, or if a gas pipeline had to be laid through a collective farm, or if a coke plant did not send the right quality of gas to the Walbrzych District Gasworks.

This man was a qualified lawyer who was capable of making his own decisions on any legal matter; however, the lawyer in the State Gas Inspection Department (Panstwowa Inspekcja Gazownicza - FIG) had the last say on legal matters.

(6) Factory Council (Rada Zakladowa)

This branch was supposed to look out for the workers' rights such as making certain that they received their vacations, their pensions, and their correct pay including any overtime compensation earned. If a man had to work overtime, he was supposed to be paid 50 percent more for the first 2 hours, 100 percent more for the second 2 hours and, if he worked 6 or more hours overtime, 100 percent more for the whole period.

b. Office of the First Deputy Director - Chief Engineer (I Zastepca Dyrektora Naczelnego - Inzynier)

The First Deputy Director, Engineer ZBOROWSKI, (fnu), was responsible for all branches subordinate to his office and for all technical matters relating to the Walbrzych District Gasworks. He was directly subordinate to the director of the Walbrzych District Gasworks and had his own private secretary.

The following branch offices were directly subordinate to the office of the First Deputy Director:

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(1) Production Branch (Dzial Produkcji)

This branch was responsible for keeping track of the quality and quantity of coal gas which the Walbrzych District Gasworks received from the coke plants, and the quantity of gas that large consumers received from the Walbrzych District Gasworks. It also had to coordinate with the coke plants from which it received gas in estimating how much gas the gasworks would receive for 30 days, 3 months, and a year in advance. The figures for 30 days in advance were used to make a chart showing how much gas large consumers could expect to receive per hour for 30 days in advance. However, this was not a fixed amount and could be expected to fluctuate.

Whenever the director of a coke plant wanted to reduce the amount of gas being sent to the Walbrzych District Gasworks because of repairs or some other reason, he had to notify the chief of the production branch in advance. If this reduction in gas presented a serious problem, the chief of the production branch notified the director of the Walbrzych District Gasworks, who in turn notified the director of the Association of the Gas Industry (Zjednoczenie Przemyslu Gazowniczego - ZPG). A meeting was then called between representatives of the ZPG, the Walbrzych District Gasworks, the Central Administration of the Metallurgical Industry (Centralny Zarzad Przemyslu Hutniczego - CZPH) and the coke plant, to try to resolve the situation.

(2) Chief Mechanical Branch (Dzial Glownego Mechanika)

This branch was responsible for all machines controlled by the Walbrzych District Gasworks. It was also responsible for the planning, controlling and inspection of all construction work. The people who worked in this branch (number unknown) were either mechanical or electrical engineers. They spent most of their time giving advice and making inspections.

(3) General Technical Branch (Dzial Ogolno Techniczny)

This branch was responsible for keeping one copy of all blueprints, for making blueprints for minor construction work, and for making over old blueprints before they became illegible.

It was also responsible for having the pipelines checked at various intervals to determine their condition. It did not perform the work itself; this was done by field maintenance sections, which are discussed later in this report. Pipelines laid in dry areas were checked every 10 years. Pipelines laid through swamps were checked more frequently, every 5 years, because the preservative on them wore off more quickly.

(4) Designing Branch (Dzial Konstrukcyjny)

This branch was like a research branch. It was responsible for designing improvements for the gas pipeline system in the Walbrzych District. In other words, if a certain type of gasket was not working properly, this branch had to design a better one. Most of the people (number unknown) working in the branch were designers.

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(5) Investments Branch (Dzial Inwestycyjny)

Whenever the director of the Walbrzych District Gasworks wanted something constructed in his area, such as a new pipeline section, he had to submit his plan to the ZPG. If the ZPG approved the plan, the money was set aside for the work, and the approved plan was sent back to the Walbrzych District Gasworks. The director then turned the approved plan over to the first deputy director, who in turn forwarded it to the Investments Branch. The Investments Branch was responsible for making out a work order from the plan and submitting it to the Projects Bureau. The Projects Bureau drew up all the blueprints and specifications based on the work order and sent copies to the Walbrzych District Gasworks, the ZPG, the FIG, and the enterprise contracted to do the construction work. The Investments Branch also had to check the finished blueprints when they were returned from the Projects Bureau; but the FIG had the last say on any revisions to be made.

The Investments Branch also had a lawyer, who was the legal advisor for all new construction work. Any questions on his legal decisions were settled by the lawyer in FIG.

This branch also received all the bills for completed construction work. These bills were checked by the branch and sent to the first deputy director for his signature. The bills were then sent back to the construction enterprise which had done the work, and it in turn sent them to the bank. The bank, upon receiving the bills, subtracted the amount from the Walbrzych District Gasworks' account and added it to the account of the construction enterprise which had done the work.

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(6) Accident Prevention Branch (Dzial Bezpieczenstwa Pracy)

This branch was responsible for enforcing safety regulations in the Walbrzych District Gasworks. The safety regulations themselves were made by the Ministry of Health (Ministerstwo Zdrowia) and the Ministry of Labor (Ministerstwo Pracy). This branch used the regulations to make up safety rules, but it could not make its own safety regulations.

The following were some of the safety regulations. All welders had to use goggles while welding; all women working on machines had to have their hair tied back; people working on machines had either to roll up their sleeves or tie their cuffs so that they would not hang loose; no objects could be thrown in workshops; areas where welding was in process had to be screened off to keep people from seeing the flame; areas where cranes were used had to be fenced off to prevent the cranes from lifting loads above workers; and no horseplay was tolerated in any place at any time.

(7) Fire Prevention Branch (Dzial Ochrony Przeciwpozarowej)

This branch was responsible for enforcing fire regulations. The branch chief was also responsible for organizing an emergency fire-fighting crew from the workers of the Walbrzych District Gasworks. He trained the crew himself for 1 hour every week.

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c. Office of the Second Deputy Director for Administrative Affairs
(II Zastępca Dyrektora do Spraw Administracyjnych)

The Second Deputy Director, WOJEWODA, (fnu), was responsible for all branches subordinate to his office and for all administrative matters in the Walbrzych District Gasworks. He was directly subordinate to the director of the Walbrzych District Gasworks. He had his own private secretary.

The following branch offices were directly subordinate to the office of the second deputy director:

(1) Administrative Branch (Dział Administracyjny)

This branch was responsible for handling all incoming and outgoing correspondence. The chief of the branch could also receive classified correspondence, which had to be taken directly to the director, or, in case of his absence, to the first deputy director. In case both the director and the first deputy director were absent, classified material could be delivered to the second deputy director. They were the only three who could open classified mail. It was logged in by the chief of the branch, who was also responsible for the classified room where secret material was kept.

(2) Supply Branch (Dział Zaopatrzenia)

This branch was responsible for buying raw materials, supplies and equipment for the Walbrzych District Gasworks, such as bog iron ore, steel, lumber, vehicle parts, oil, grease, paint, electric equipment, and diesel oil. This branch also had to plan ahead the amount of supplies that would be needed for the following year. This was done by totaling all requisitions that were submitted a year in advance.

(3) Transportation Branch (Dział Transportowy)

This branch was responsible for the distribution of vehicles to all subordinate agencies of the Walbrzych District Gasworks, and for making inspections to see whether these vehicles were being used properly and whether their maintenance was being kept up. It was also responsible for planning how much would be transported the following year and how many additional vehicles would be needed to haul the increase in loads.

(4) Collections Branch (Dział Inkasa)

This branch billed large consumers. 1. (Small consumers were billed by city branch offices.) When the bill was made out, one copy went to the consumer and the other to the Bank of Poland (Narodowy Bank Polski - NBP). All enterprises and factories kept their accounts there. The bank took the amount of the bill from the consumer's account and added it to the Walbrzych District Gasworks' account. All the figures on the amount of gas large consumers used were turned over to this branch.

The same procedure was used when the Walbrzych District Gasworks was billed by the coke plants. The cost of the gas was taken from the Walbrzych District Gasworks' account and added to the account of the coke plant which supplied the gas.

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(5) Social Branch (Dzial Socjalny)

This branch was responsible for welfare matters such as the following: children under 16 years of age were not supposed to work, women were not supposed to lift anything heavier than 15 kg, pregnant women were supposed to get a 3-month vacation (usually one and one-half months before delivery and one and one-half months after delivery), and workers were supposed to get adequate medical treatment.

4. Walbrzych District Gas Pipeline System

a. Background

In general, all the gas equipment of the Walbrzych District Gasworks was old and obsolete. All high-pressure gas pipelines except the branch line to the Rokita Chemical Factory in BRZEG DOLNY (see Annex B, Item 15) and the branch line to the Kowary (Schmiedeberg) reduction and measuring station (see Annex B, Item 7) were 20 years old or older. The branch line to the Rokita Chemical Plant was laid in 1954 by the State Enterprise for the Construction of Gas Equipment (Gazobudowa - Panstwowe Przedsiębiorstwo Budownictwa Urządzeń Gazowniczych - PPBUG) and the branch line to the Kowary reduction and measuring station was laid in 1953 by the same enterprise. All the high-pressure gas pipelines subordinate to the Walbrzych District Gasworks were designed to operate under 36 atmospheres of working pressure, but they actually operated under 12 atmospheres of working pressure because of insufficient gas. They were all made of steel which contained 0.15 percent carbon. Very little money was being invested in this area to improve the gas pipeline system, and the only repairs being made were those that were absolutely necessary.

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[] no plans to construct additional coke plants in this area. It was felt by most of the Polish people that this part of Poland would go back to the Germans some day and any investment in this area would be lost.

All reduction and measuring stations situated along the gas pipeline of the Walbrzych District were subordinate to the Walbrzych District Gasworks.

b. Coke Plants, Compressor Stations, and Raw Gas Consumers

(1) Coke Plants and Compressor Stations

There were four coke plants for the entire Walbrzych area: Victoria, Bialy Kamien, Mieszko, and Boleslaw Chrobry (see Annex B, Item 1a, 1b, 1c, and 1d). 2. All four were in WALBRZYCH, situated less than 500 m apart, and were built long before World War II. They used obsolete methods for the production of coal gas and sent a total of 30,000 to 40,000 cu m per hour of raw coal gas to the Walbrzych District Gasworks.

They produced coke for the metallurgical industry; sold coal tar, naphthalene, benzol, phenol, and ammonia to the chemical industry; and sold extra coal gas, not needed in the production of coke, to the Walbrzych District Gasworks.

Two types of coal were used in production by the four coke plants, coking coal and anthracite. Both types were received from coal mines in the city of WALBRZYCH. 3. The four coke plants together used about 5000 tons of coal every 24 hours. This was based on 320 working days per year, because coke plants averaged about 45 days a year for repairs, during which time they were completely or partially shut down, depending on the nature of the repairs.

These coke plants produced two types of coke, metallurgical coke and blast furnace coke. Metallurgical coke was produced from a mixture of 70 percent coking coal and 30 percent anthracite (this was an average percentage mixture depending on the quality of the coal). Blast furnace coke was produced from coking coal and was shipped with all the metallurgical coke to Upper Silesia,

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where it was used in the metallurgical industry or exported to East Germany, Bulgaria, Hungary, Rumania, or Sweden (exact figures on export of coke were unknown [redacted]).

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The quality of the coal gas produced by the four coke plants was about 4250 K/cal per cum of gas, and each coke plant produced an average of 355 cum of coal gas per ton of coal.

Two of the coke plants, the Victoria and Bialy Kamien, had compressor stations as integral parts. The Victoria Compressor Station (Victoria Tlocznia Gazu) (see Annex C) was directly subordinate to the office of the director of the Walbrzych District Gasworks. It was in the Victoria Coke Plant. Its mission was to provide the pressure to transport the raw coal gas it received from the Victoria Coke Plant to the Sobiencin Compressor and Purifying Station (see Annex C, and Annex B, Item 6) and to the consumers of raw gas (see Annex B, Items 2, 3, 4, and 5). There were seven people working in this compressor station: three machinists, three machinists' helpers, and one blacksmith. The equipment in this compressor station consisted of three low-pressure compressors, Aerzner make, which were built in 1936 [redacted]. Each of the compressors had 50X1-HUM 6000-cu-m per hour capacity and operated under .8 atmospheres of pressure. The condition of all three of these compressors was poor; they were old and obsolete.

The Bialy Kamien Compressor Station (Bialy Kamien Tlocznia Gazu) (see Annex C) was also directly subordinate to the office of the director of the Walbrzych District Gasworks. It was in the Bialy Kamien Coke Plant. There were seven people working in this compressor station also, three machinists, three machinists' helpers, and one blacksmith. There were three low-pressure compressors in this station. Two of them, of the Yeager type, were built in 1938 by the Germans, and were old and obsolete. The third compressor was the Lurgi type. It was built in 1956 by mechanics employed in the Bialy Kamien Coke Plant. A poor job was done on this compressor, and it had to be almost entirely rebuilt by the PPBUG. Each of the three compressors had a capacity of 6000 cu m per hour and operated under .8 atmospheres of pressure. The mission of this compressor station was the same as that of the Victoria Compressor Station.

The Mieszko and Boleslaw Chrobry Coke Plants also had compressors, but they were small (gas blower type) and belonged to the coke plants and not to the Walbrzych District Gasworks.

(2) Raw Coal Gas Consumers

The following four installations were the only consumers of raw coal gas in the Walbrzych District. [redacted]

[redacted] the branch 50X1-HUM lines joined the main line which connected the four coke plants and the Sobiencin Compressor and Purifying Station. The main line was a low-pressure pipeline about 2½ km long and 600 mm in diameter, operating under a working pressure of about .8 atmospheres.

(a) Victoria Thermoelectric Station 4. (see Annex B, Item 2)

The Victoria Thermoelectric Station was adjacent to the Victoria Coke Plant. It received 5000 to 15,000 cu m per hour of raw coal gas from the four coke plants in the Walbrzych area on Saturdays, Sundays, and holidays when other industrial facilities were not working.

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(b) The Karol Foundry (see Annex B, Item 3)

The Karol Foundry received about 1300 cu m per hour of raw coal gas from the four coke plants. The branch line to the Karol Foundry joined the main pipeline from the coke plants somewhere between the coke plants and the Sobiencin Compressor and Purifying Station (shown on Annex B as Item 6). Exact location of junction was unknown. The Karol Foundry burned this raw coal gas in its forges in the production of pig iron parts for machines for the coal industry. The Karol Foundry paid the Walbrzych District Gasworks for the use of the gas.

(c) The Krzysztof Porcelain Factory (see Annex B, Item 4)

The Krzysztof Porcelain Factory received a total of from 4000 to 5000 cu m per hour of raw gas from the four coke plants. The gas was used for heat energy in the production of porcelain. The Krzysztof Porcelain Factory paid the Walbrzych District Gasworks for this gas.

(d) Crystal Factory (name unknown)(see Annex B, Item 5)

This crystal factory received a total of 1000 to 1500 cu m per hour of raw coal gas from the four coke plants. The gas was used for heat energy in the production of crystal. The crystal factory paid the Walbrzych District Gasworks for the gas.

c. Sobiencin Compressor - Purifying Station (see Annex B, Item 6, and Annexes C and D)

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This was the only compressor and purifying station subordinate to the Walbrzych District Gasworks. It was in the Sobiencin district of WALBRZYCH and was equipped with three compressors. In 1958 the Gazobudowa laid a foundation for four more compressors, which had been received in 1958 and were the Maw-type. Each compressor had a capacity of 2500 cu m per hour and operated under 12 atmospheres of pressure. They were supposed to be put into operation in May 1959, but the Wroclaw M-5 Electric Motor Plant (Wroclawska Wytownia Silnikow Elektrycznych M-5) was behind schedule in producing the four 40 kw, 10,000-V electric motors for the compressors. When the four new compressors did go into operation, one of the Demag compressors, the one in the worst condition, was to be turned in for scrap metal, and the four new compressors were to work with the other two old ones.

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The foundation for the compressor to be turned in was to be broken up and a new foundation laid by the PPBUG for four more new compressors in its place. When these four compressors were received, they also were to be the Maw type. The remaining two Demag compressors were to be turned in for scrap metal, and the compressor station was to operate with eight Maw-type compressors. it would be a long time before the last four compressors were to be in operation because of the lack of money and the lack of desire to invest in this area. these last four compressors had not even been ordered at the time he left Poland.

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The mission of the Sobiencin Compressor and Purifying Station was to receive raw coal gas from the four coke plants and to purify it for the consumers of purified gas. Three to four thousand cu m per hour of this purified gas was sent to the surrounding cities of WALBRZYCH, SZCZAWNO ZDROJ, SWIEBODZICE, and JEDLINA ZDROJ. All the remaining gas was transported either by a trunk line (300 mm in diameter) to the west, or by a trunk line (500 mm in diameter) to the east.

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d. Gas Pipelines of the Walbrzych District

(1) Western Line, WALBRZYCH-ZGORZELEC (see Annex B)

This was the trunk line going to the west. It was 98 km long and began at the Sobocien Compessor and Purifying Station (see Annex B, Item 6) and ended at the Zgorzelec Gasworks (Gazownia Zgorzelec) (see Annex B, Item 13) in ZGORZELEC. The diameter of this steel trunk line was 300 mm and the thickness 8 mm, and it was designed to operate under 36 atmospheres of working pressure. The trunk-line sections were connected by butt joints and were butt-welded (see Annex E). The preservative on the trunk line was asphalt and kraft paper. The line was laid [] in 1938. There were five branch lines from this trunk line before it reached its terminal, the Zgorzelec Gasworks.

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(a) Branch Line to Item 7 in Annex B

This was a branch line to the Kowary Reduction and Measuring Station. It was steel, 7 km long, 150 mm in diameter, and it was designed to operate under 36 atmospheres of working pressure. The thickness of the pipe was 4 mm. The preservative on the pipeline was asphalt and kraft paper. The pipeline sections had kulisto-kielichowe (round cup) connections which allowed for 7 degrees of flexibility (see Annex F). It was laid in 1953 by the PPBUG.

This reduction and measuring station for the city of KOWARY reduced the pressure of the gas before it went into the low-pressure gas pipelines of the city. The station also measured the amount of gas the city received. KOWARY received about 600 cu m per hour of purified coal gas, which was used for homes and city lighting.

(b) Branch Line to Item 8 in Annex B

50X1-HUM

This was a branch line to the Karpacz (Krummhuebel) Reduction and Measuring Station. It was about 10 km long, 150 mm in diameter. It was made of steel which was 4 mm thick, and it was designed to operate under 36 atmospheres of working pressure. The preservative on the pipeline was kraft paper and asphalt. The pipeline sections had butt joints and were butt-welded. It was laid [] about 1938.

50X1-HUM

This reduction and measuring station reduced pressure of the gas before it went into the low-pressure gas pipelines of KARPACZ. In addition the station measured the amount of gas the city received.

KARPACZ received about 500 cu m per hour of purified coal gas. It was used in homes and for city lighting.

(c) Branch Line to Item 9 in Annex B

This was a branch line to the Jelenia Gora (Hirschberg) Reduction and Measuring Station. It was about 3 km long, 150 mm in diameter, made of steel 4 mm thick, and was designed to operate under 36 atmospheres of working pressure. The pipeline sections had butt joints and were butt-welded. The preservative on the pipeline was asphalt and kraft paper. It was laid [] about 1938.

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This reduction and measuring station reduced the pressure of the gas before it went into the low-pressure gas pipelines of JELENIA GORA. It also measured the amount of gas the city received. JELENIA GORA received about 700 cu m per hour of purified gas, which was used in homes, in small industries, and in lighting the city.

(d) Branch Line to Items 10 and 11 in Annex B

This was a branch line to the Lwówek Śląski (Loewenberg) Reduction and Measuring Station and the Bolesławiec (Bunzlau) Reduction and Measuring Station. About 16 km from the junction of the trunk line and the branch line, there was a very short pipeline (just a few meters long) to the Lwówek Reduction and Measuring Station. At the very end of the branch line (about 32 km from the same junction) was the Bolesławiec Reduction and Measuring Station. This branch line was 32 km long, 150 mm in diameter, made of steel 4½ mm thick, and was designed to operate under 36 atmospheres of working pressure. The preservative on the pipeline was asphalt and kraft paper, and the pipeline connections were joined by butt joints and were butt-welded. It was laid [redacted] about 1938.

50X1-HUM

The Lwówek Reduction and Measuring Station reduced the pressure of the gas before it went into the low-pressure gas pipelines of the city and measured the amount of gas received by the city, which was about 400 cu m per hour of purified coal gas for use in homes and lighting the city.

The Bolesławiec Reduction and Measuring Station had the same purpose except that it was for the city of BOLESŁAWIEC. The city received about 600 cu m per hour of purified coal gas. A glass works (name unknown) in the city, which manufactured medical glass ampoules, received about 50 percent of the gas, and the rest was used in homes.

(e) Branch Line to Item 12 in Annex B

This was a very short, steel branch line (just a few meters long) to the Luban (Lauban) Reduction and Measuring Station. It was 150 mm in diameter, 4½ mm thick, and was designed to operate under 36 atmospheres of working pressure. The preservative on this pipeline was asphalt and kraft paper.

The Luban Reduction and Measuring Station reduced the pressure of the gas before it went into the low-pressure gas pipelines of the city of LUBAN, and measured how much gas the city used.

LUBAN received about 1000 cu m per hour of purified gas, which was used for homes and small industries and city lighting.

(f) Terminal of the Western Line - Zgorzelec Gasworks (see Annex B, Item 13)

The Zgorzelec Gasworks was a city gasworks, but different from other city gasworks because it was subordinate to the Walbrzych District Gasworks (see Annex C for organizational chart showing all subordinate agencies of the Walbrzych District Gasworks). All other city gasworks were subordinate to the ZPG. This was the only instance about which [redacted] a gas-producing gasworks was subordinate to a district gasworks.

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It produced 3000 to 5000 cu m per hour of coal gas, of which about 500 cu m per hour was used in the city of ZGORZELEC. The rest was exported to GOERLITZ, East Germany, with the remaining gas from the four coke plants in

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WALERZYCH, which was not used by the consumers along the eastern or western 50X1-HUM trunk lines. The pipeline between ZGORZELEC and GORLITZ was the responsibility of East Germany. [redacted] 8000 to 12,000 cu m per hour of coal gas was exported to East Germany. There was a measuring station close to the 50X1-HUM Polish-East German border that measured the exact amount of gas exported [redacted]

The Zgorzelec Gasworks had been built [redacted] long before World War II. It consisted of a compressor and purifying station (types unknown), two gas holders (capacities and types unknown), and an unknown number of coke ovens. The gasworks was in very poor condition, and only repairs that were absolutely necessary were being made to keep it in operating condition.

From ZGORZELEC, the line continued into East Germany under the administration of the East German government. This was the only international gas pipeline connection between Poland and East Germany (see double line leading west from ZGORZELEC on Annex B).

(g) Field Maintenance Sections on the Western Line (see Annex C)

All field maintenance sections were subordinate to the Walbrzych District Gasworks (see Annex C). The Zgorzelec Gasworks was responsible for the gasworks at ZGORZELEC, and for the high-pressure gas pipelines from the East German-Polish border to LUBAN. It took care of all the maintenance, repair, operation, and conservation of the gasworks and the high-pressure gas pipelines between these two points. 50X1-HUM

The Boleslawiec (Sekoja Boleslawiec) Field Maintenance Section [redacted] was responsible for the maintenance, repair, operation, and conservation of all high-pressure gas pipelines from LUBAN to STARA KAMIENICA (KEMNITZ). There were 30 to 40 people working in the section (welders, blacksmiths, laborers, and construction workers) and there was one workshop.

The Kowary-Karpacz Field Maintenance Section (Sekoja Kowary-Karpacz) (exact location unknown) was responsible for the maintenance, repair, operation, and conservation of all high-pressure gas pipelines from STARA KAMIENICA to and including the Kowary branch line. There were about 30 people working in this field section (welders, blacksmiths, laborers, and construction workers), and they had one workshop.

The Szczawno Zdroj Field Maintenance Section (Sekoja Szczawno Zdroj) was in WALERZYCH, about 3½ km to the west of the Sobiencin Compressor and Purifying Station. It consisted of a workshop, garage, and spare parts warehouse. There were 40 to 50 people working there (welders, blacksmiths, laborers, and construction workers). This field section was responsible for the repair, maintenance, operation, and preservation of all high-pressure gas pipelines from the branch line going to KOWARY to, and including the branch line going to, SWIDNICA (SCHWEIDNITZ). This field maintenance section took in part of the eastern line and part of the western line.

(2) Eastern Line WALERZYCH-WROCLAW

This was the trunk line from the Sobiencin Compressor and Purifying Station to the east. It was 69 km long and began at the Sobiencin Compressor and Purifying Station (Item 6 in Annex B) and ended at the Wroclaw City Gasworks (shown as Item 16 in Annex B). The diameter of the pipeline was 500 mm, and the thickness of the steel was 11½ mm. The pipeline sections were joined by kulisto-kielichowe connections (see Annex F). The pipeline was designed to operate under 36 atmospheres of working pressure. The preservative on the pipeline was kraft paper and asphalt. It was laid [redacted] about 1939.

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There were two branch lines off this trunk line before it reached its destination, the Wroclaw City Gasworks:

(a) Branch Line to Item 14 in Annex B

This branch line was 300 meters long. It was to the Swidnica (Schweidnitz) Reduction and Measuring Station. The diameter of the steel pipeline was 150 mm and its thickness was $3\frac{1}{2}$ mm. The preservative on the pipeline was kraft paper and asphalt, and it was designed to operate under 36 atmospheres of working pressure. The pipeline connections were butt-joined and butt-welded. It was laid about 1939.

50X1-HUM

The reduction and measuring station for the city of SWIDNICA reduced the pressure of the gas before it went into the low-pressure gas pipelines of the city, and measured the amount of gas the city received.

SWIDNICA received 1500 to 2000 cu m per hour of purified coal gas. It was used for homes, small industries, and city lighting.

(b) Branch Lines to Item 15 in Annex B

This branch line was 37 km long. The diameter of the pipeline was 200 mm and the thickness of the steel was $6\frac{1}{2}$ mm. The preservative was kraft paper and asphalt. It was designed to operate under 16 atmospheres of working pressure. The pipeline sections had butt joints which were butt-welded. This pipeline was laid by Gazobudowa in 1954. The part of it that crossed the Oder River was laid 1 m under the river bed.

The Rokita Chemical Factory (Item 15 in Annex B) in BRZEG DOLNY (SEIFERSDORF) received 3000 to 4000 cu m per hour of purified coal gas. It paid the Walbrzych District Gasworks for the use of this gas.

The Rokita Chemical Factory manufactured aniline dye for clothes. 6.

The planned pipeline in Annex B is not discussed in this report, because when and if it is built, it will be subordinate to the Zabrze (Hindenburg) District Gasworks (Zaklady Gazownictwa Okregu Zabrzanskiego - ZGOZ). It would be the connecting link joining the pipeline system of the Zabrze District Gasworks with that of the Walbrzych District Gasworks.

(c) Terminal of the Eastern Line - Wroclaw City Gasworks
(Item 16 in Annex B)

The Wroclaw City Gasworks (Zaklady Gazownictwa Okregu Wroclawskiego - ZGOW) produced 4000 to 5000 cu m per hour of coal gas for the city of WROCLAW (BRESLAU). The gas was used in homes and local industries. It also received 5000 to 10,000 cu m per hour of purified coal gas from the Walbrzych District Gasworks because it did not produce enough gas itself to supply the demands of local consumers.

This, the largest gasworks in Poland, was at coordinates EL7-03, N51-09, UTM XS-4360. It also had the two largest wet-type gas holders in Poland, with capacities of 110,000 cu m each. The gasworks was in very good condition.

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The only other information [redacted] about the gasworks was that its two largest local industrial consumers of purified coal gas were the Rafmet Colored Metal Refinery (Rafineria Metalow Kolorowych - Rafmet) in WROCLAW, and the Wroclaw Railroad Car Factory (Wroclawska Fabryka Wagonow).

(d) Field Maintenance Sections on the Eastern Line

All field maintenance sections were subordinate to the Walbrzych District Gasworks (see Annex C).

The Szczawno Zdroj Field Maintenance Section was responsible for the high-pressure gas pipelines from the Sobiencin Compressor and Purifying Station to SWIDNICA. Part of its area of responsibility lay with the western line and part with the eastern line as was given in detail in paragraph 4'd (1) (g) above.

The Wroclaw Field Maintenance Section (Sekoja Wroclaw) was in the city of WROCLAW. About 25 people were employed there (welders, blacksmiths, laborers, and construction workers). This field maintenance section was responsible for the operation, repair, maintenance, and conservation of all high-pressure gas pipelines from SWIDNICA to the Wroclaw City Gasworks.

(a) Critical Points of the Pipeline Network

There were two alternatives for destroying the pipeline system in the Walbrzych area:

1. Destruction of Coke Plants

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[redacted] the best way to destroy the gas pipeline system in the Walbrzych area because there were only four coke plants which produced gas for the Walbrzych area, and they were all in WALBRZYCH. If these four coke plants were demolished, the gas industry in this section of Poland would be totally destroyed. The export of gas to East Germany would be reduced by 5000 to 7000 cu m per hour, the metallurgical industry would suffer because it received altogether about 5000 to 6000 tons of coke from these four coke plants every 24 hours, and the chemical industry would also suffer because it received coal tar, naphthalene, benzol, phenol, and ammonia from the four coke plants. If these coke plants were destroyed, it would take a minimum of 1 year to put them back into operation.

2. Destruction of the Sobiencin Compressor and Purifying Station

A serious handicap would result from destroying the compressor station and the purifying station (see Annex D, Items 1 and 4). It would also take 1 year to repair these two stations because Poland had mostly imported compressors and had none to spare. Also there was much time and money involved in building a compressor and purifying station. But destruction would affect only the consumers of purified gas because the pipeline to the consumers of raw gas did not go through the Sobiencin Compressor and Purifying Station.

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COMMENTS:

1. [] the following figures on costs of gas to consumers: industrial consumers paid 0.25 zlotys per cu m of raw coal gas and 0.50 zlotys per cu m of purified gas; private consumers paid 0.50 zlotys for the first 25 cu m of purified gas and 0.25 zlotys for each cu m over 25 cu m. 50X1-HUM

2. All coke plants were subordinate to the Central Administration of the Metal-~~urgical~~ Industry (Centralny Zarzad Przemyslu Hutniczego - CZPH), which was in turn subordinate to the Ministry of Heavy Industry (Ministerstwo Przemyslu Ciezkiego - MPC). 50X1-HUM

3. As a result of the great complexity of mine shafts in the area of WALBRZYCH, the land shifted and settled, [] 30 percent of the homes in WALBRZYCH were tilted. 50X1-HUM

4. The Victoria Thermoelectric Station was equipped with boilers that could burn either coal or gas. [] the capacity of this thermoelectric station was about 20 megawatts. 50X1-HUM

5. [] this type of connection was used because the earth frequently shifted and settled in this area because of the number of mine shafts. This type of connection withstood shifting and settling of the earth best because of its flexibility. 50X1-HUM

6. [] there was a mystery surrounding this plant. It was supposed to produce aniline dye. 50X1-HUM

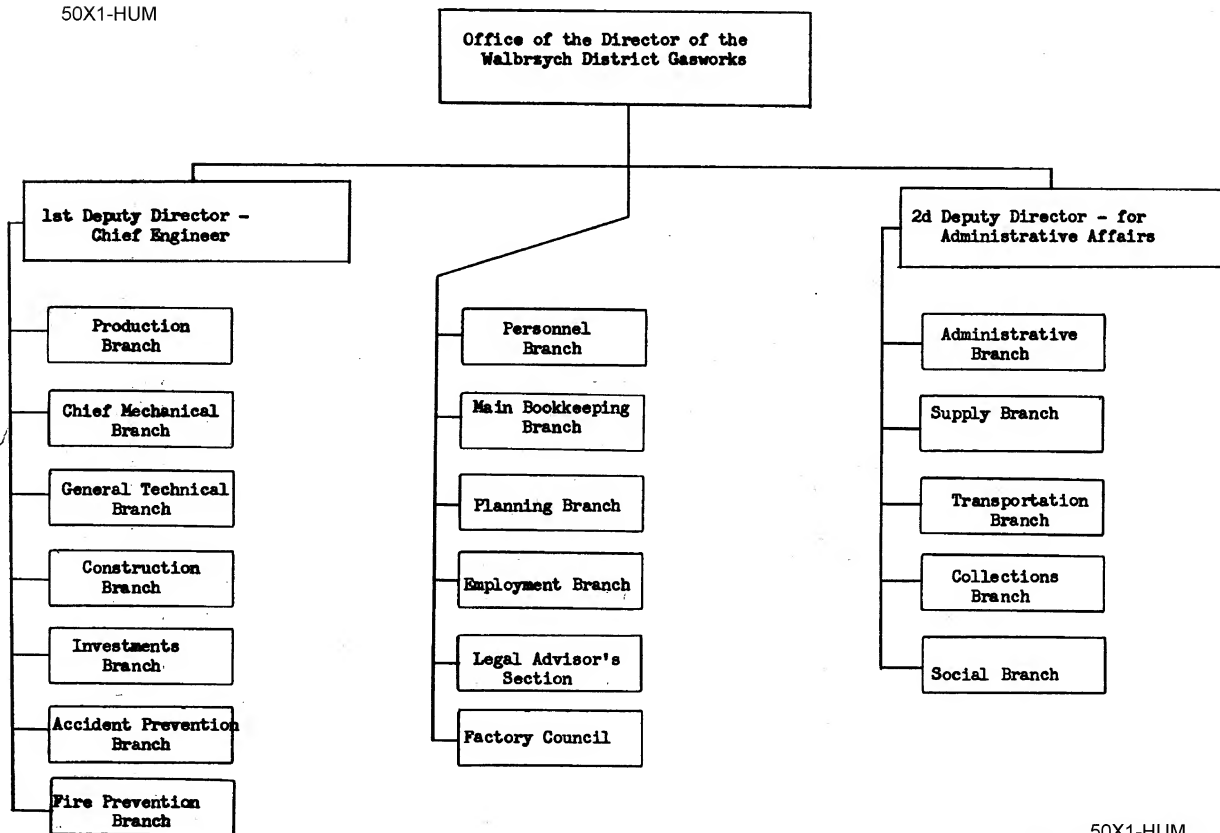
the plant was heavily guarded. [] it was too well-guarded for the type of production being carried on. [] at least 20 civilian guards on one relief. These guards worked a 12-hour shift, after which they were off for 24 hours. (This was in accordance with the state laws concerning civilian guards, [] 50X1-HUM) There were three guards at the gate to the plant, six walking guards who patrolled the plant grounds, six tower guards (one in each of six towers around the plant area), three vehicle guards who accompanied each truck (one guard per truck) leaving the plant, and two guard commanders.

[] the plant [] used [] for production of tabun, a nerve gas. 50X1-HUM

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ORGANIZATIONAL CHART OF THE MAIN OFFICE OF THE WALBRZYCH DISTRICT GASWORKS, WALBRZYCH, POLAND

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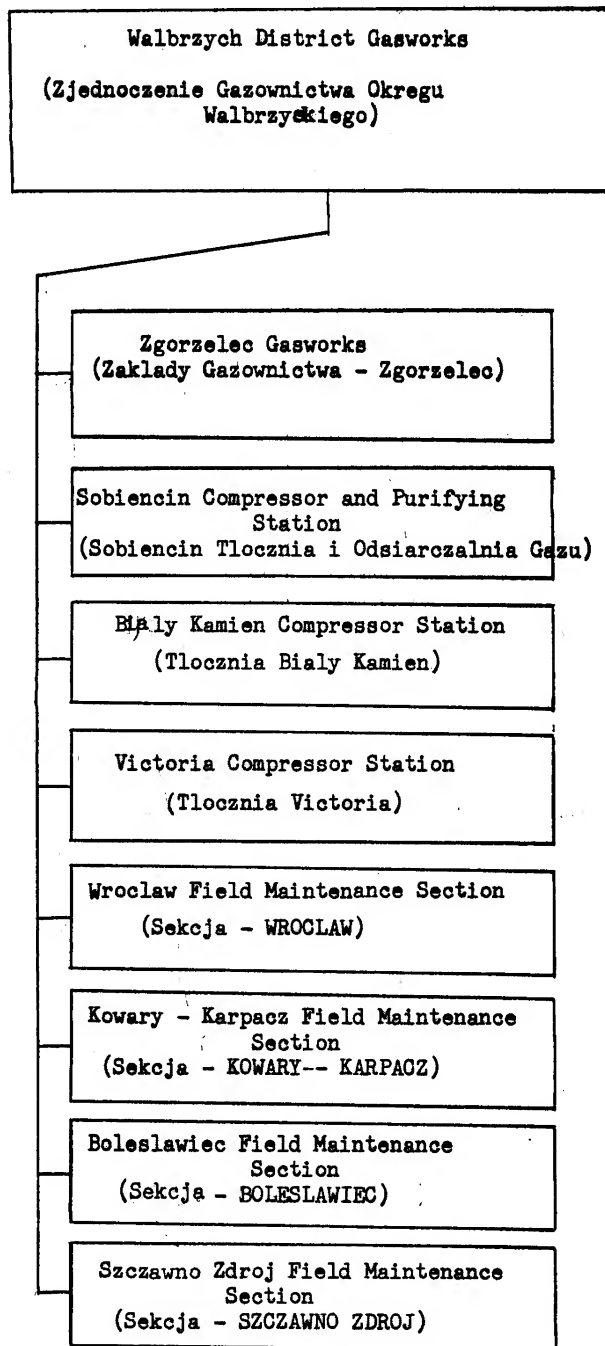
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Legend to Annex B

(For Annex B, see attachment)

- 1a. Victoria Coke Plant
- 1b. Bialy Kamien Coke Plant
- 1c. Mieszko Coke Plant
- 1d. Boleslaw Chrobry Coke Plant
- 2. Victoria Thermoelectric Station
- 3. Karol Foundry
- 4. Krzysztof Foundry
- 5. Crystal Factory
- 6. Sobiencin Compressor and Purifying Station
- 7. Kowary Reduction and Measuring Station
- 8. Karpacz Reduction and Measuring Station
- 9. Jelenia Gora Reduction and Measuring Station
- 10. Lwowek Slaski Reduction and Measuring Station
- 11. Boleslawiec Reduction and Measuring Station
- 12. Luban Reduction and Measuring Station
- 13. Zgorzelec City Gasworks
- 14. Swidnica Reduction and Measuring Station
- 15. Rokita Chemical Factory
- 16. Wroclaw City Gasworks
- Ø. Internal diameter of the pipeline in mm.
- "P" Planned pipeline
- International pipeline connection

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Annex C**CHART SHOWING THE SUBORDINATE AGENCIES OF THE WALBRZYCH DISTRICT
GASWORKS IN WALBRZYCH, POLAND**

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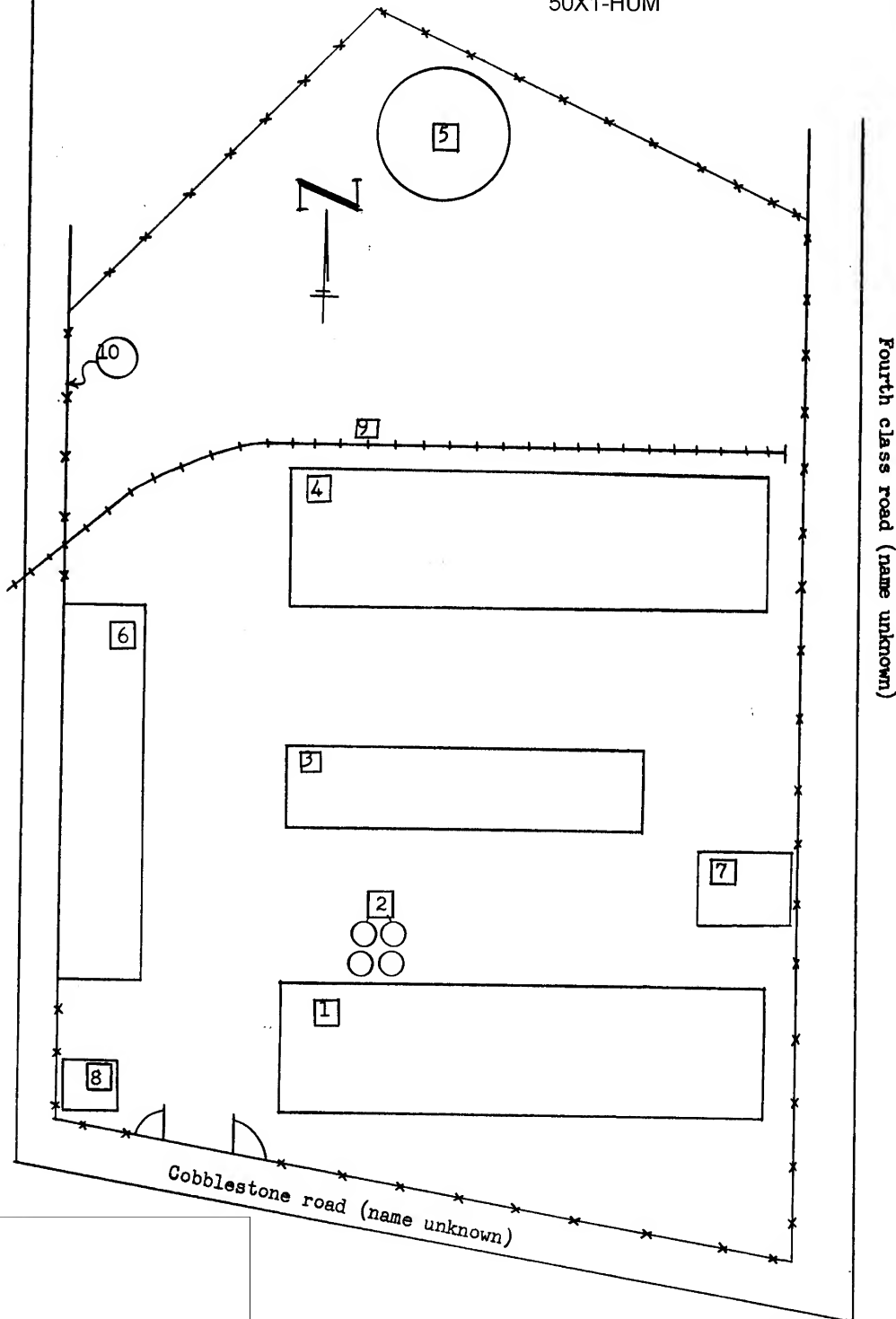
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ANNEX D

SKETCH OF THE SOBIENCIN COMPRESSOR AND PURIFYING STATION

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Legend to Annex D

1. A 2-story red brick building about 50 x 12 x 14 m, the first floor of which contained the incoming and outgoing trunk lines. The second floor housed three piston-type Demag compressors manufactured during World War II. Each compressor had a capacity of 10,000 cu m per hour, capable of operating under 36 atmospheres of working pressure, and had a 1800-KW, 10,000-V motor. The compressors were in poor condition. There was also a hand-operated 25-ton overhead traveling crane on the second floor of the building used in making repairs on the compressors.

2. Four column gas purifiers, about 15 m tall, used to take the naphthalene out of the gas by the Doctor Otto method. This was the only compressor and purifying station that had such a purifying system. Purifying was usually done in the coke plants, but in this case it was done both in the coke plants and at the compressor and purifying station. The reason for this was that the systems at the coke plants were not adequate. The Doctor Otto system at the Sobiencin Compressor and Purifying Station was in bad condition and worked poorly.

3. An electricity-distributing building, a 2-story red brick structure, about 35 x 6 x 8 m, the first floor of which housed two transformers. One transformer reduced the 10,000 V coming into the building to 220 V for use in lighting in the Sobiencin Compressor and Purifying Station. The other transformer reduced the 10,000 V coming into the building to 380 V for use in running small motors. The 10,000 V was sent directly to the compressor station to run the compressors. The second floor of this building contained a switchboard for the gas pipeline system, the offices of officials working in the compressor and purifying station, and a laboratory that was used to check the quality of the gas received from the coke plants. This building and all the equipment in it was built during World War II. The building was in good condition.

4. A purifying station used to take the hydrogen sulfide out of the gas by the Bischoff dry-purifying method. The capacity of the station was 25,000 to 26,000 cu m per hour. It was housed in a 2-story red brick building, about 50 x 15 x 10 m. It was equipped with a gantry crane used to put new bog iron into the purifiers and take the old bog iron out. This station was in poor condition.

5. A Mann dry-type gas holder with a capacity of 100,000 cu m. It had undergone major repairs in 1953 and was in good condition. It was built of steel plates welded together and was about 80 m tall.

6. A workshop equipped to handle repairs on the compressors, the purifying station, the gas holder, and high-pressure gas pipelines. There was also a garage for vehicles in the same building, which was a 2-story stucco structure, about 40 x 8 x 8 m.

7. A warehouse containing supplies such as paint, rags, oil, and grease. It was a 1-story red brick building about 6 x 5 x 3½ m.

8. An entrance building, near the entrance to the Sobiencin Compressor and Purifying Station, 1-story stuccoed, about 5 x 5 x 3½ m. There was a man on duty at all times who checked everyone coming into and going out of the station. There was also a time clock used by all the workers for punching their time upon arrival and leaving work.

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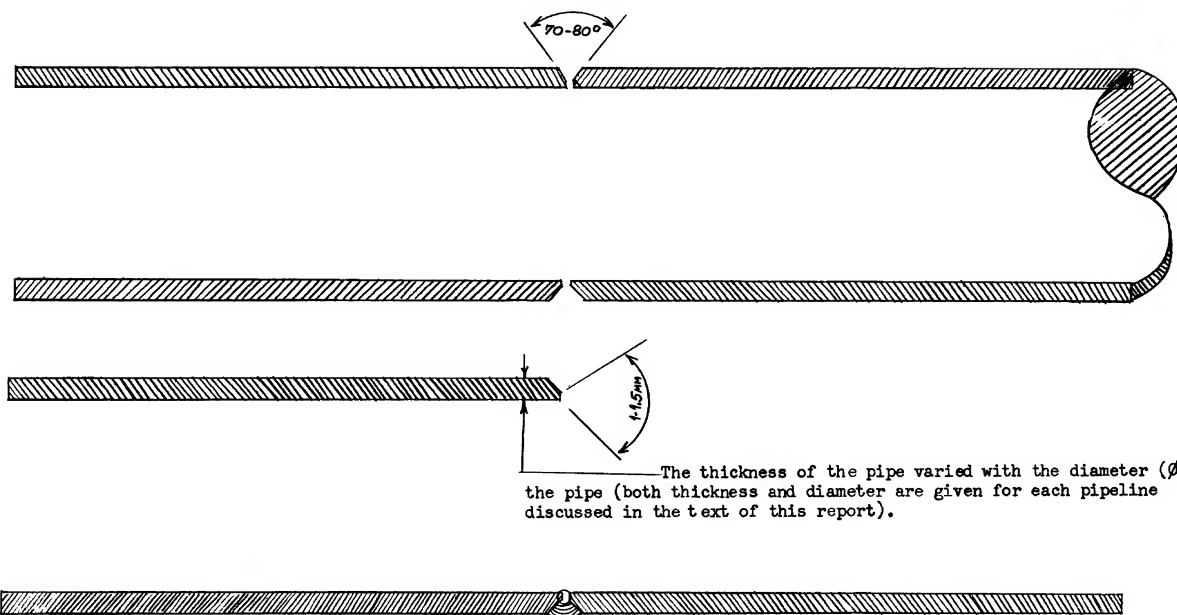
9. A railroad spur used for rail transport of bog iron and equipment for the compressor and purifying station.

10. A wire-mesh fence, about 3 m high, which enclosed the terrain of the compressor and purifying station. There were three strands of barbed wire on the top of the fence.

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Annex E
SKETCH OF A BUTT-WELDED GAS PIPELINE CONNECTION USED IN POLAND

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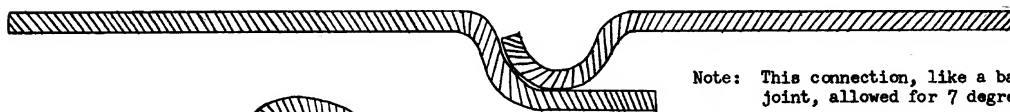
Note: All pipes were made of standard commercial steel which contained 0.15 percent carbon.

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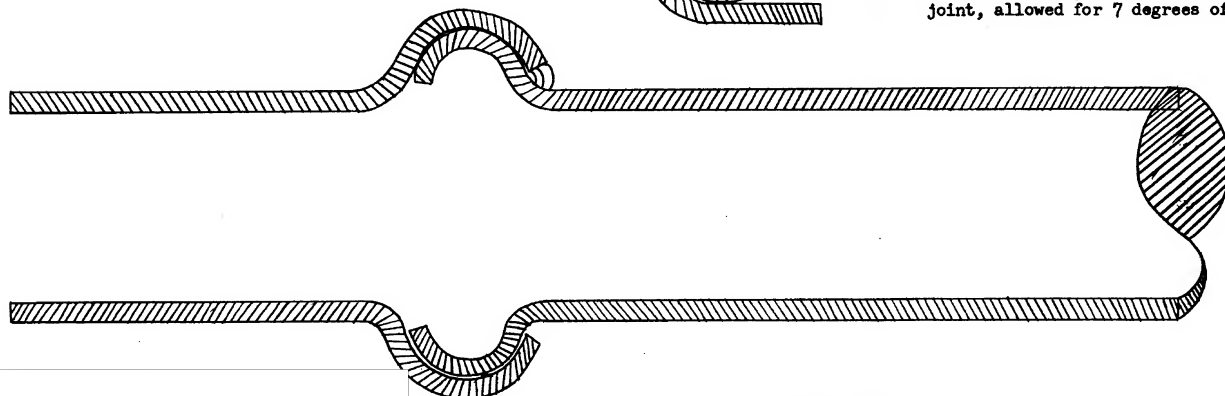
Annex F

SKETCH OF A KULISTO-KIELICHOWE GAS PIPELINE CONNECTION USED IN POLAND

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Note: This connection, like a ball-and-socket joint, allowed for 7 degrees of flexibility.



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ANNEX B
LOCATION OF GAS PIPELINES IN THE WALECZYCH DISTRICT OF POLAND

